

reference from a list of multiple electronic addresses stored in the
parent file

REMARKS

Claims 1-32 are pending in the application. New claims 33-36 have been added. Applicants gratefully acknowledge the Examiner's recognition of allowable subject matter in claims 27-32. Claims 1-16 and 22-26 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,061,738 to Osaku et al. ("Osaku"). Claims 17-21 stand rejected under 35 U.S.C. § 103(a) as being obvious in view of Osaku.

Claim 10 stands rejected under 35 U.S.C. § 112, second paragraph. Claim 10 has been amended to overcome the rejection.

The Examiner has objected to the title. The title has been amended to overcome the objection.

Discussion of the Cited Art

U.S. Patent No. 6,061,738 to Osaku et al. discloses a method and system for accessing information on a network using message aliasing functions. Osaku teaches accessing a file accessible at a network URL through a pre-assigned simplified network address corresponding to the URL, and for displaying the page having the URL as its address. Accordingly, Osaku teaches a method and system for providing easier URL and Web page access because persons wanting to access the page need only input the simplified network address, thereby avoiding the need

to know and input the entire electronic address (URL character string). See Osaku, Abstract.

For example, Osaku discloses a method and system whereby a user can provide a number as input to a Web browser and have a corresponding page returned to the client display screen. The number (simplified network address or "SNA") is recognized by a service program as not a valid IP address. The service program forms a conversion request command for the SNA, sends the command to a conversion database, and thereby obtains a fully formatted network access command, such as a corresponding URL, that may be used to retrieve the desired homepage. For example, this may be achieved by putting the SNA into a request to a page that invokes a program that looks up a URL corresponding to the SNA. The corresponding URL is passed to the browser which then retrieves and displays the page in a usual manner. Osaku, col. 4, line 33 - col. 6, line 9; col 10, lines 26-50.

Contrary to the Examiner's assertion in paragraph 6 of the Action, Osaku provides no disclosure whatsoever of "selecting, at the client, a hyperlink that is a logical point of access to a file, the logical point of access being associated with a logical reference in a parent file, the logical reference uniquely identifying a file independently of an electronic address at which the file is located." More specifically, contrary to the Examiner's assertion, Osaku does not disclose (in Fig. 1 or at col. 5, lines 10-35) "selecting, at the client, a hyperlink that is a logical point of access to a file," or a "logical point of access" associated with a logical reference.

Moreover, Osaku provides no disclosure whatsoever of a logical reference contained in a parent file, e.g. an HTML file used by a Web browser to display a user-selectable hyperlink (logical point of access) to a desired file.

Additionally, Osaku provides no disclosure whatsoever of a logical reference in a parent file corresponding to an electronic address (e.g. URL) in a parent file.

Finally, Osaku does not disclose a logical reference corresponding to multiple alternative URLs, in a parent file, for files replicated on multiple servers.

Accordingly, if the homepage is no longer available at the URL corresponding to the simplified network address, a broken link and/or error message results.

Discussion Of The Claimed Invention

The present invention is directed to a computer implemented method and apparatus for retrieving files in a network using logical references corresponding to physical references.

A traditional electronic address, e.g. URL, is a "physical reference," in that it provides information required for identifying, locating, retrieving and/or transmitting a desired file, e.g. by identifying a file's location on a server identified in the electronic address. However, such file location information may become outdated and therefore result in a broken link or an error message that the requested file is unavailable at the electronic address.

The logical reference is unlike a physical reference in that it does not in and of itself provide information required for identifying, locating, retrieving and/or transmitting a desired file. Rather, such a logical reference is simply a placeholder

for an electronic address of a file. The logical reference is associated with a logical point of access, e.g. a hyperlink, selectable by a user. See specification, page 7, lines 7-13; page 10, line 23 - page 11, line 2. Accordingly, the user may use a Web browser, and select hyperlinks, as is generally known in the art, but those links are logical points of access because they are not directly associated with an electronic address for the linked file as known in the prior art.

For example, an HTML file may be a parent file interpretable by a Web browser to display a hyperlink (logical point of access) to the desired file. The hyperlink is associated with a logical reference stored in the parent file instead of the traditional electronic address. Also stored in the parent file are one or more traditional electronic addresses corresponding to the logical reference. Such traditional electronic addresses are inserted into the parent file by a server when the parent file is requested by a client before the parent file is transmitted to the requesting client. When the hyperlink is selected by a user to retrieve a desired file, the corresponding logical reference of the parent file is resolved into a corresponding traditional electronic address for the desired file using the electronic address(es) stored in the parent file. The corresponding traditional electronic address may be inserted into the parent file by the server at or near the time of request for the parent file to help ensure that the electronic address is up-to-date.

By disassociating the electronic address of the file from the logical reference and/or associated logical point of access, and maintaining a lookup table or database associating each logical reference with a corresponding (preferably current) electronic address, the broken link problem is greatly reduced.

Optionally, the file may be replicated across multiple servers and a list of multiple corresponding physical references may be maintained in association with the corresponding logical reference. Accordingly, files including logical references need not be updated when an address of a referenced file changes. Rather, when electronic addresses change, only the lookup table or database needs to be updated. For example, a single centralized lookup table may maintain the integrity of logical references for numerous files/web pages. When a web page or other file containing a logical reference is requested, associated physical references (traditional physical references/electronic addresses) from the centralized lookup table are inserted into the requested file. This provides a list of up-to-date electronic addresses to the client that may be used alternatively to retrieve a desired file. When a logical point of access is selected by a user, an associated logical reference is used to identify a corresponding physical reference/electronic address that is used to retrieve the file. Specification, page 11, line 3 - page 12, line 22. The list of physical references provides alternative addresses in the event a single address is out-of-date (e.g. resulting in a broken link) and/or provides alternative addresses for selecting a best (e.g. closest, fastest) server capable of providing the best response. If the file is unavailable at a first identified address, another address from the list of addresses may be used to retrieve the desired file. Specification, page 13, lines 14-27, page 14, lines 16-21. In this manner, a replicated file may be retrieved from alternative servers where it is replicated. This enhances reliability of service.

Argument

Claim 1

The Examiner has rejected independent claim 1 under 35 U.S.C. § 102(e) as anticipated by Osaku. Applicants have amended claim 1 to emphasize the user's selection of a hyperlink that is a logical point of access, and to require existence of the logical reference in a parent file. See Specification, page 7, lines 7-13; page 10, line 23; page 11, line 2.

A rejection under 35 U.S.C. § 102 is proper only if each and every element of the claim is found in a single prior art reference. MPEP § 2131. Contrary to the Examiner's assertion that all elements of claim 1 are disclosed in Osaku, Osaku provides no disclosure whatsoever of "selecting, at the client, a hyperlink that is a logical point of access to a file, the logical point of access being associated with a logical reference in a parent file."

Instead, Osaku teaches that a user may provide a simplified network address ("SNA") at the client that can be "converted" to a URL for a home page. Accordingly, an SNA is analogous, if at all, to a logical reference of the present invention. Osaku discloses that the SNA includes "alphanumeric characters, including URL numeric codes, control characters and special characters, such as ASCII characters having a standard control function, which a user inputs in a client to access network information," e.g. by typing the SNA. Col 4, lines 13-20 and 43-45. However, the SNA is provided by a user, and is not contained in the parent file.

For at least these reasons, claim 1 is believed patentable.

Claim 2-9

Claims 2-9 depend from claim 1 and are therefore allowable for at least the reasons set forth above. In addition, amended claim 2 requires that the identifying step be performed at the client by reference to a list of physical references identifying a plurality of electronic addresses for the logical reference. Because this claim limitation is not disclosed by Osaku, claims 2-9 are believed patentable.

Claim 10

The Examiner has rejected independent claim 10 under 35 U.S.C. § 102(e) as anticipated by Osaku. Applicants respectfully traverse the rejection.

Initially, it is noted that independent claim 10 is directed to activities occurring at the server, e.g. at a server storing the requested file, after a request for a file has been made. Osaku, on the other hand, is directed to activities occurring primarily at the client, although communication may be had with a server, before a request for a file has been made. Additionally, claim 10 requires modifying a requested file before transmitting it to the requesting client, namely, by inserting a list of one or more physical references corresponding to a logical reference in the requested file.

Osaku provides no disclosure of pre-transmission modification of a requested file.

More specifically, independent claim 10 is directed to a method including the step of "receiving, at the server, a request for transfer to a client of a parent file containing a logical reference, the request being in the form of a physical reference." Contrary to the Examiner's assertion, Osaku provides no disclosure whatsoever of

receiving a request for a parent file containing a logical reference. To the extent the simplified network address (SNA) of Osaku may be analogous to a logical reference, the SNA is not contained in a parent file. Instead, the SNA is provided by a user (to relieve the user from remembering or providing an entire network address) and is resolved at the client or via a network to identify a URL for retrieving a file. Osaku does not disclose a file that contains a logical reference. For at least this reason, the rejection of claim 10 should be withdrawn.

Additionally, claim 10 includes the step of "modifying the file, at the server, by inserting therein a list of physical references corresponding to each logical reference." Accordingly, the requested file containing a logical reference is modified at the server to include a list of physical references, e.g. URLs, corresponding to the logical reference. One or more of these physical references may later be used to retrieve another file. Osaku provides no disclosure whatsoever of modifying a file to include a list of physical references corresponding to a logical reference contained in the file.

Contrary to the Examiner's assertion in paragraph 6 of the action (with reference to claim 8), Osaku does not teach that the Hatch process program is modified prior to downloading to a client. Rather, Osaku teaches that the Hatch program creates an alias string from a user input string. The alias string, unlike the user input string, is complete and properly formatted and so may be used to retrieve a desired file, or to command a database to return desired search results. Col. 14, lines 8-28. Neither the Hatch process program nor the alias/user input strings is

analogous to the file. Osaku does not disclose modifying a file to include a list of physical references corresponding to a logical reference contained in the file.

For at least these additional reasons, the rejection of claim 10 should be withdrawn.

Claims 11-13

Claims 11-13 depend from claim 10 and are therefore allowable for at least the reasons set forth above for claim 10. In addition, claim 11 requires "modifying the requested file, at the server, by inserting therein a program for selecting a server." Claim 12 requires "modifying the file, at the server, by embedding therein a reference to a program for selecting a server." Amended claim 13 requires "transmitting, from the server to the client, the server selection program." These limitations are nowhere disclosed in Osaku.

Osaku provides no disclosure whatsoever of modifying a requested file at a server. Additionally, Osaku does not disclose a program for selecting a server or a physical reference to a file, or embedding a reference to such a program. Osaku has no need for a program for selecting a server/physical reference because Osaku has a single URL (physical reference) for each file and/or simplified network address. Accordingly, there is no group of servers, or group of physical references/URLs, from which to select.

For at least these reasons, the rejection of claims 11-13 should be withdrawn.

Claims 14-15

The Examiner has rejected independent claim 14 under 35 U.S.C. § 102(e) as anticipated by Osaku. Applicants have amended claim 14 to require requesting transmission of a parent file that comprises a logical reference and a list of electronic addresses corresponding to the logical reference. Amended claim 14 also requires identifying, at the client, an electronic address from the list of electronic addresses.

Osaku nowhere discloses these limitations, as discussed above with reference to claims 2, 10 and 11-13.

For at least these reasons, claims 14 and 15 are believed to be patentable.

Claim 16

The Examiner has rejected independent claim 16 under 35 U.S.C. § 102(e) as anticipated by Osaku. Applicants respectfully traverse the rejection for the reasons set forth above for claim 14, namely because claim 16 requires, and Osaku fails to disclose, a parent file containing a logical reference, and a list of physical references listing at least one electronic address for each logical reference.

In addition, claim 16 requires a program for selecting a server responsive to a request for a file identified by a logical reference. The program is configured to request the file using an electronic address from a list of electronic addresses indicating the file's location on the selected server. The program is further configured to repeatedly select an alternate server and submit an alternate request if the file is irretrievable from the selected server until the file is transmitted to the client or until the file has been requested from all servers identified in the list.

As discussed above, Osaku generally discloses conversion of a simplified network address to a single URL, or identifying a single URL associated with a simplified network address. Osaku provides no disclosure whatsoever of providing a list of alternative electronic addresses identifying alternative servers, and does not teach requesting of a desired file from alternative servers using alternative addresses.

For at least these reasons, the rejection of claim 16 should be withdrawn.

Claims 17-21

The Examiner has rejected claims 17-21 under 35 U.S.C. § 103(a) as being obvious over Osaku. Applicants respectfully traverse the rejections.

Claims 17-21 depend from claim 16 and are therefore believed patentable for at least the reasons set forth above for claim 16.

For at least these reasons, the rejection of claims 17-21 should be withdrawn.

Claims 22-26

The Examiner has rejected claims 22-26 under 35 U.S.C. § 102(e) as being anticipated by Osaku. Applicants respectfully traverse the rejection for the reasons set forth above for claims 11-14 and , namely because claim 22 requires, and Osaku fails to disclose, a parent file containing a logical reference and a list of electronic addresses, and a program for modifying the parent file by inserting a list of electronic addresses.

Claims 23-26 depend from claim 22 and are therefore believed patentable for at least the reasons set forth above for claim 22.

For at least these reasons, the rejection of claims 22-26 should be withdrawn.

Claims 33-36

New claims 33-36 are believed patentable for the reasons similar to those set forth above, particularly for claim 1.

Additionally, claim 33 requires the steps of: detecting a user's selection of a parent file's hyperlink to a desired file; and, if the hyperlink is associated with a logical reference of the parent file that identifies the desired file independently of a URL, identifying an electronic address stored in the parent file that corresponds to the logical reference.

Osaku provides no disclosure whatsoever of the presence of a logical reference, and an electronic address corresponding to the logical reference, in the same file. Rather, Osaku concerns resolving an SNA to identify a URL for retrieving a typical, conventional web page. Any resolving of the SNA is performed irrespective of the content of the web page (parent file).

For at least this additional reason, independent claim 33, and dependent claims 34-35, are believed patentable.

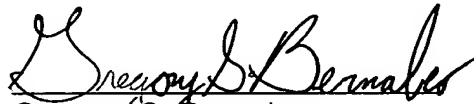
Attached hereto is a marked-up version of the changes made to the specification by the current amendment titled "Version with Markings to Show Changes Made."

CONCLUSION

In view of the foregoing amendments and remarks, Applicants believe claims 1-32 to be patentable and the application in condition for allowance. Applicants respectfully request issuance of a Notice of Allowance. If any issues remain, the undersigned request a telephone interview prior to the issuance of an action.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Title

The title has been amended as follows:

[COMPUTER IMPLEMENTED] METHOD AND APPARATUS FOR
[MANAGING FILES IN] RETRIEVING A NETWORK FILE USING A LOGICAL
REFERENCE

In the Claims

The claims have been amended as follows:

1. (Amended) A method of communication between a client computer and a server computer connected to the client computer by a communications network, the method comprising the steps of:
 - (a) [selecting] receiving, at the client, a user's selection of a hyperlink that is a logical point of access to a file, the logical point of access being associated with a logical reference in a parent file, the logical reference uniquely identifying the file independently of an electronic address at which the file is located;
 - (b) identifying[, at the client,] an electronic address corresponding to the logical reference; and
 - (c) receiving, at the client, the file identified by the logical reference.
2. (Amended) The method of claim 1, wherein the identifying step is performed at the client by reference to a list of physical references at the client, the

list of physical references [listing at least one] identifying a plurality of electronic [address] addresses corresponding to the [for each] logical reference.

5. (Amended) The method of claim [4] 2, wherein the list of physical references is appended to the parent file.

6. (Amended) The method of claim [5] 2, wherein the server modifies the parent file to include the list of physical references before transmitting the parent file to the client.

10. (Amended) A method of communication between a client computer and a server computer connected to the client computer by a communications network, the method comprising the steps of:

- (a) receiving, at the server, a request for transfer to a client of a parent file containing a logical reference, the request being in the form of a physical reference;
- (b) modifying the file, at the server, by inserting therein a list of physical references corresponding to each logical reference; and
- (c) transmitting, from the server to the client, the modified file [and the server selection program].

13. (Amended) The method of claim 12, wherein the method further comprises the step of:

(e) transmitting, from the server to the client, the [server selection] program.

14. (Amended) A method for communication between a client computer and a server computer connected to the client computer by a communications network, the method comprising the steps of:

(a) requesting, at [the] a client, transmission of a parent file to the client, the parent file comprising [a file identified by] a logical reference, the logical reference uniquely identifying [the] a file independently of an electronic address at which the file is located;

(b) receiving the parent file at the client, the parent file comprising a list of electronic addresses corresponding to the logical reference;

(c) identifying, at the client, an electronic address from the list of electronic addresses [of a file corresponding to the logical reference], the electronic address identifying a server and the location of the file on the server; and

([c]d) requesting transmission of the file from the server to the client using the electronic address identified in step ([b]c).

15. (Amended) The method of claim 14, further comprising the steps of:

[(d) requesting, at the client, transmission of a parent file from a server to the client, the parent file containing the logical reference, step (d) being performed before step (a); and]

- (e) receiving [the parent file at the client, the parent file containing a list of electronic addresses corresponding to each logical reference, and] a program for selecting a server [upon a request for transfer of a file identified by a logical reference], step (e) being performed [intermediate] before step[s] ([d]c) [and (a)].

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